New York City College of Technology, CUNY

CURRICULUM MODIFICATION PROPOSAL FORM

This form is used for all curriculum modification proposals. See the [Proposal Classification Chart](http://openlab.citytech.cuny.edu/collegecouncil/files/2014/08/2013-10-09-Proposal_Classification_Chart.pdf) for information about what types of modifications are major or minor. Completed proposals should be emailed to the Curriculum Committee chair.

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| **Title of Proposal** | **Change of entry requirements for Bachelor of Science in Mathematics Education** |
| **Date** | **22 September 2015** |
| **Major or Minor** | **Major** |
| **Proposer’s Name** | **Prof. Simon Smith** |
| **Department** | **Mathematics** |
| **Date of Departmental Meeting in which proposal was approved** | **November 5th, 2015** |
| **Program Director Name** | **Prof. Andrew Douglas** |
| **Program Director Signature and Date** | **Macintosh HD:Users:Andy:Desktop:Files:cv:signature.jpg 04/06/2016** |
| **Department Chair Name** | **Prof. Sandie Han** |
| **Department Chair Signature and Date** |  **04/06/2016** |
| **Academic Dean Name** | **Justin Vazquez-Poritz** |
| **Academic Dean Signature and Date** | **04/06/16** |
| **Brief Description of Proposal** | **Increase the admission requirements; add a continuation requirement and a graduation requirement for the Bachelor of Science in Mathematics Education degree.** |
| **Brief Rationale for Proposal**(Provide a concise summary of why this proposed change is important to the department. More detailed content will be provided in the proposal body).  | **Standards for admission requisite to the Bachelor of Science degree in Mathematics Education at City Tech are significantly lower than comparable programs in the New York City area. We must increase our standards to meet the new accreditation standards set by the Council for the Accreditation of Educator Preparation (CAEP) to assure the grade point average of our BS candidate cohort meets or exceeds a minimum of 3.0.****To strengthen success potential; a freshman essay, personal interview and eligibility to enter MAT 1475 would be the new acceptance criteria. Students will be required to maintain a “C” or higher in major-related courses and graduate with a GPA minimum of 2.7. In addition, to improve program status and provide students with competitive opportunities in career placement, GPA standards for admission must increase not only to meet the new CAEP requirement, but also to increase rates of completion and graduation. Enhanced standards will also improve prospects in future employment and support student acceptance to related Master’s degree programs.** |
| **Proposal History**(Please provide history of this proposal: is this a resubmission? An updated version? This may most easily be expressed as a list). | **This is the first submission of this proposal.** |

MATHEMATICS EDUCATION MAJOR MODIFICATION PROPOSAL

Presented by Dr. Simon M. Smith

Assistant Professor Mathematics

DESCRIPTION AND RATIONALE

Description of changes

The purpose of this proposal is to increase the admissions requirements for the Bachelor of Science in Mathematics Education, and to add a continuation and graduation requirement.

The current admissions requirements are:

Freshman Criteria

• Minimum 76 high school average

• Minimum 1100 SAT scores (550 on math SAT)

• Minimum 3 units of high school math (should provide preparation to enter MAT 1475 Calculus I)

Transfer Criteria

• Must be CUNY proficient (reading, writing, and math)

• Must have a minimum cumulative GPA of 2.0.

• Must have completed prerequisites for MAT 1475 Calculus I or higher.

The proposed admissions requirements are:

Freshman Criteria

* Students applying for admission must meet the College standards for admission into a baccalaureate program and must be eligible to enroll in MAT 1475.

• Applicants must write an essay and must be interviewed by program faculty to determine their eligibility for state certification and potential for success in the program.

Transfer Criteria

• Must be CUNY proficient (reading, writing, and math)

• Must have a minimum cumulative GPA of 3.0\*

• Must have completed prerequisites for MAT 1475 Calculus I or higher.

• Applicants must write an essay and must be interviewed by program faculty to determine their eligibility for state certification and potential for success in the program.

\*At the discretion of the program director or department chair, a student with a GPA lower than 3.0 may be admitted into the program.

The proposed continuation requirements are:

• Students must receive a grade of ``C’’ or higher in each EDU or MEDU course taken in the major.

• Students must receive a grade of ``C’’ or higher in each MAT course taken in the major.

The proposed graduation requirements are:

• A minimum grade point average of 2.7 \*\* is required for graduation.

\*\*At the discretion of the program director or department chair, a student with a GPA lower than 2.7 may be permitted to graduate.

Rationale

Reputation

The department wishes to strengthen its mathematics education program, and plans to do this by raising the admissions requirements. Low entry requirements were a way of attracting students to the fledgling program; the degree is now established, and the department feels it can afford to raise the entry requirements without reducing enrollment. Moreover, accreditation standards now require us to recruit students who have a high academic ability.

The reputation of any program will rise or fall with the quality of its graduates. This is especially true of an education degree in New York City, because so many graduates will be employed by the city school system. Each graduate is an ambassador for the program, be it positive or negative. It is therefore important that we recruit and retain the best students. As the following charts (Figure 1-3) show, there is a strong positive correlation between the GPA of incoming college students and their subsequent performance in college classes (Figure 1 uses all available data for Math Ed at City Tech; Figures 2 and 3 use the very large data sets available for public colleges in Illinois). Consequently, there is a correlation between the GPA of incoming Math Ed students and their mathematical sophistication upon graduation.

Figure 1: A comparison of GPA scores for current Mathematics Education students at City Tech as of Fall 2014.[[1]](#footnote-1) (One data point per student, correlation coefficient = 0.51)

Figure 2: A comparison of GPA scores for 42,000 students enrolled in public 4-year colleges in the state of Illinois[[2]](#footnote-2) (One data point per college, correlation coefficient = 0.83)

Figure 3: A comparison of GPA scores for 48,000 students enrolled in public community colleges in the state of Illinois[[3]](#footnote-3) (One data point per college, correlation coefficient = 0.61)

This positive correlation suggests that raising the admissions requirements of the program will raise the level of attainment of students graduating City Tech with a Mathematics Education Bachelors Degree. These graduates will then raise the reputation of the Math Ed degree at City Tech when they enter the workforce.

Raising the admissions requirements brings with it the risk of a reduction in demand for places. However, our admissions requirements are so far below those of other mathematics education programs in and around New York City that we believe a moderate increase will not adversely affect our enrollment numbers. The chart below shows the admission requirements or averages for freshmen and transfer students for enrollment in the mathematics education program at four other universities or colleges.

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| School | Incoming Freshmen GPA | TransferStudent GPA |
| City College (CUNY) | — | 3.0 (min)[[4]](#footnote-4) |
| NYU | 3.5 (min)[[5]](#footnote-5) | Precise data unavailable[[6]](#footnote-6) |
| Stony Brook[[7]](#footnote-7) | 3.6 – 3.9 / 90 – 96 (avg.) | 3.0 (min) |
| PACE[[8]](#footnote-8) | 3.0 (avg.) | 2.7 (avg.) |
| City Tech (Career and Technical Teacher Education Program) | — | 2.5 (min) |
| City Tech (Math Ed program) | 2.0 / 76 (min) | 2.0 (min) |

Our proposed change to the admission requirements will give the Bachelor of Science in Mathematics Education degree similar requirements as the Bachelor of Science in Career and Technical Teacher Education Program in the School of Professional Studies at City Tech. The CTTE course requires students to “write an essay and […] be interviewed by program faculty to determine their eligibility for state certification and potential for success in the program.[[9]](#footnote-9)”

Accreditation

The Council for the Accreditation of Educator Preparation (CAEP) requires us to meet the following standard[[10]](#footnote-10): “The provider ensures that the average grade point average of its accepted cohort of candidates meets or exceeds the CAEP minimum of 3.0, and the group average performance on nationally normed ability/achievement assessments such as ACT, SAT, or GRE:

 • is in the top 50 percent from 2016-2017;

 • is in  the top 40 percent of the distribution from 2018-2019; and

 • is in the top 33 percent of the distribution by 2020.”

In order to meet this goal, we must raise our admissions requirements for transfer students.

Continuation and graduation requirements

To meet the CAEP standards, we wish to require that a student obtain a grade of ``C’’ or above in all major courses, and a minimum graduating GPA. This will help our students, who need to gain admittance into a masters program.  The Bachelor of Science in Career and Technology Teacher Education degree at City Tech already requires these continuation and graduation standards. This proposed change will bring the Math Ed degree in line with the CTTE program.

Summary

Modestly raising the admissions standards for the Bachelor of Science in Mathematics Education at City Tech should not lower enrollment numbers, and may increase the mathematical sophistication of our graduates. In turn, this will improve the reputation of the program, increasing the value of the degree in the eyes of employers and increasing the employability of all (past, present and future) graduates of City Tech’s Math Ed program. The proposed continuation and graduation changes will allow the program to reach its CAEP requirements, and will, moreover, help our graduating students gain admission to a masters program. The Bachelor of Science in Career and Technology Teacher Education degree at City Tech already requires these continuation and graduation standards. All our proposed changes will allow us to more easily meet the new accreditation standards set by the CAEP.

**The following are revisions proposed for the Mathematics Department**

**Program: Bachelor of Science in Mathematics Education**

Program Code: 35103 (HEGIS: 0833.00)

**Effective: Fall 2016**

**Change of entry requirements for Bachelor of Science in Mathematics Education**

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| **FROM:** | **TO:** |
| The ~~current~~ requirements for entry into the Mathematics Education program are as follows: **Freshman Criteria**• ~~Minimum 76 high school average~~• ~~Minimum 1100 SAT scores (550 on math SAT)~~~~• Minimum 3 units of high school math (should provide preparation to enter MAT 1475 Calculus I)~~**Transfer Criteria**• Must be CUNY proficient (reading, writing, and math)• ~~Must have a minimum cumulative GPA of 2.0.~~• Must have completed prerequisites for MAT 1475 Calculus I or higher.~~The current continuation and graduation requirements for the Mathematics Education program are: none.~~ | The requirements for entry into the Mathematics Education program are as follows: **Freshman Criteria**• Students must meet the College standards for admission into a baccalaureate program and must be eligible to enroll in MAT 1475.* Applicants must write an essay and must be interviewed by program faculty to determine their eligibility for state certification and potential for success in the program

**Transfer Criteria**• Must be CUNY proficient (reading, writing, and math)• Must have a minimum cumulative GPA of 3.0\*• Must have completed prerequisites for MAT 1475 Calculus I or higher• Applicants must write an essay and must be interviewed by program faculty to determine their eligibility for state certification and potential for success in the program(\*At the discretion of the program director or department chair, a student with a GPA lower than 3.0 may be admitted into the program.)The continuation requirements for the Mathematics Education program are as follows:• Students must receive a grade of ``C’’ or higher in each EDU or MEDU course taken in the major.• Students must receive a grade of ``C’’ or higher in each MAT course taken in the major.The graduation requirements for the Mathematics Education program are as follows:• A minimum grade point average of 2.7 |

**Rationale:** Raising the admissions standards for the Bachelor of Science in Mathematics Education at City Tech will increase the mathematical sophistication of our graduates and will not lower enrollment numbers. The proposed change will improve the reputation of the Mathematics Education program, thus increasing the value of the degree in the eyes of employers. This will increase the employability of all (past, present and future) graduates of City Tech’s Mathematics Education program. The new CAEP accreditation standards require us to ensure that “the average grade point average of [our] accepted cohort of candidates meets or exceeds the CAEP minimum of 3.0”. The proposed continuation and graduation requirements will allow the Math Ed program to meet the requirements set by the CAEP and will help our graduating students gain admittance into a masters program.

**ALL PROPOSAL CHECK LIST**

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| Completed CURRICULUM MODIFICATION FORM including: |  |
| * Brief description of proposal
 | X |
| * Rationale for proposal
 | X |
| * Date of department meeting approving the modification
 | X |
| * Chair’s Signature
 | X |
| * Dean’s Signature
 | X |
| Evidence of consultation with affected departmentsList of the programs that use this course as required or elective, and courses that use this as a prerequisite. | N/A |
| Documentation of Advisory Commission views (if applicable). | N/A |
| Completed [Chancellor’s Report Form](http://openlab.citytech.cuny.edu/collegecouncil/files/2014/08/2013-10-09-Chancellor_Report_Quick_Reference_Guide1.doc). | X |

**EXISTING PROGRAM MODIFICATION PROPOSALS**

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| --- | --- |
| Documentation indicating core curriculum requirements have been met for new programs/options or program changes.  | N/A |
| Detailed rationale for each modification (this includes minor modifications) | X |

1. Transfer GPA on admission to the City Tech Math Ed program was only available in CUNYFirst for 5 students [↑](#footnote-ref-1)
2. Sample size: 42,000 students. Source: Chicago Tribune (<http://media.apps.chicagotribune.com/tables/first-year-gpa.htm> accessed 21st Nov 2014) [↑](#footnote-ref-2)
3. Sample size: 48,000 students. Source: Chicago Tribune (<http://media.apps.chicagotribune.com/tables/first-year-gpa.htm> accessed 21st Nov 2014) [↑](#footnote-ref-3)
4. City College does not have a dedicated Math Ed program. Instead, students who are math majors can enroll in the adolescent (grades 7-12) initial certification program, but doing so requires a GPA of at least 3.0 overall and the completion of at least 12 math credits with a GPA of at least 3.0.

[Source: <http://www.ccny.cuny.edu/mathed/admissions_undergraduate.cfm> accessed 20th Nov 2014] [↑](#footnote-ref-4)
5. For admission to any undergraduate program at NYU

[Source: telephone call the Admissions at NYU on 14th Nov 2014] [↑](#footnote-ref-5)
6. Precise information unavailable, but the typical GPA of an accepted transfer student is “far higher than 2.7”.

[Source: telephone call to Transfer Admissions for the Department of Teaching and Learning at NYU on 14th Nov 2014] [↑](#footnote-ref-6)
7. [Source: email from Undergraduate Admissions received 21st November 2014] [↑](#footnote-ref-7)
8. These are approximate average GPAs for students admitted onto the mathematics concentration program for education majors

[Source: telephone call to Admissions at Pace University on 14th November 2014] [↑](#footnote-ref-8)
9. New York City College of Technology 2014-2015 [↑](#footnote-ref-9)
10. CAEP Standard 3.2: Admission standards indicate that candidates have high academic achievement and ability. Source: <http://caepnet.org/standards/standards/standard-3-candidate-quality-recruitment-and-selectivity/> [↑](#footnote-ref-10)